

Amendments to the Specification:

On page 2 please replace the second paragraph with the following amended paragraph:

As an example we can look at the use of prior art car rearview or sideview mirror. The prior art mirror systems, active or passive, reflect the image directly or through an attenuation media. Very bright images, like those seen at night on a car's rearview mirror, can cause the driver to be temporarily blinded, and miss a significant part of the image. By tilting the mirror few degrees, as depicted in Figure 1a, part of the light is reflected from the mirror surface rather than from the reflective surface behind the glass, thus creating a dimmed image of the entire view. Another type of car mirror has a controlled shutter/filter that changes the entire FOV transparency by electronically driving an Electro-Chromic coating (or other type of controlled transparent material). This prior art lacks the ability to dim just portions of the image (e.g. the blinding spots) and leave the rest of it unchanged.

On page 2 please replace the third paragraph with the following amended paragraph:

As another example we can look at the use of prior art sunglasses or eyeglasses. In case where bright objects are surrounded by dark areas (e.g. at night) or where dimmed areas are surrounded by bright environment (during the day) the viewer suffers from blind areas and reduced visibility, due to eyesight adjusting to the average brightness (Eye Iris). The prior art controls the transparency of the glasses by a shutter/filter via an electronic ambient light sensor, which drives an Electro-Chromic coating or by using Opto-Chromic material embedded in the glass activated by the UV when in sunlight environment. Using these methods to adjust the transparency of the glasses allows the entire image to be controlled. This prior art suffers from lack of ability to dim just the ~~disturbing~~ blinding spots/areas and leave the rest of image areas in the proper contrast level.

On page 2 please delete the last paragraph which begins with with "Another example is the well known prior art car mirror"

On page 3 please replace the first paragraph with the following amended paragraph:

Another yet example is the Auto-dimming mirror prior art, which is using a transparency controlled medium in front of the mirror. The transparency is controlled by utilizing the electro-optic or Electro-Chromic characteristics of the material (Fig 2). The ambient light sensor [22] located near the system, senses the light, and changes the control voltage at the battery/power source [13]. This voltage change drives the active shutter [12] to the proper transparency, such that the image reflected from the mirror [11] looks dimmed to the viewer's eye [33]. The bright spots [14] and dark areas of interest [15] are dimmed at the same magnitude which prevents blinding the viewer on one hand, but provides a darker and an obscured image of the area behind him on the other. This prior art lacks the ability to dim just portions of the image (e.g. the blinding spots, very bright areas, etc.) and leave the darker areas in the proper contrast level.

On page 4 under "Objects and Advantages" please replace paragraph a) with the following amended paragraph:

- a) ~~to~~ To provide real time enhanced visibility for optical systems by automatically reducing the effect of strong, blinding light spots/area when viewing dark images and vise versa.

On page 4 under "Objects and Advantages" please replace paragraph c) with the following amended paragraph:

- c) To provide the ability to enhance the observed image~~visibility~~ by controlling the intensity of the different image elements.

On page 4 under "Objects and Advantages" please replace paragraph e) with the following amended paragraph:

- e) The ability to add Light Controlled Panel (LCP)~~this device (LCP)~~ to existing optical systems or arrays that generate a primary or secondary images.

On page 4 under "Objects and Advantages" please replace paragraph f) with the following amended paragraph:

f) To provide a method for enhancing visibility not only for automotive use, but ~~also all~~ kind of observation systems like for telescopes, binoculars, goggles, glasses, cameras, etc.

On page 4 under "Summary of The Invention" please replace the first paragraph with the following amended paragraph:

In accordance with this invention a method for enhancing visibility at various light conditions, comprising steps like focusing the desired ~~scenery~~ object or view (source image) on a light modulating device, ~~processing~~ modulating the light of the focused image (object) by a system like a ~~Control~~ Controlled Panel (LCP) and projecting the enhanced image with or without magnification to the observer eyes.

On page 5 under "Drawing Figures" please replace description for Figure 5a with the following amended description:

Figure 5a- Method For Enhancing Visibility ~~VEM~~ Implementation for Car Mirror – Direct Light Control

On page 5 under "Drawing Figures" please replace description for Figure 5b with the following amended description:

Figure 5b- Method For Enhancing Visibility ~~VEM~~ Implementation for Car Mirror – Retro Light Control

On page 5 under "Drawing Figures" please replace description for Figure 6 with the following amended description:

Figure 6 – Method For Enhancing Visibility ~~VEM~~ implementation on Glasses

On page 6 under “Reference Numerals in Drawings” please replace description for reference number 32 with the following amended description:

32 – Light ~~Control~~ Controlled Panel (LCP)

On page 7 under “Detailed Description of the Invention” please delete the paragraph starting with “The Visibility Enhancing Method (VEM) is using” and ending with “the same substrate as the TF array”

On page 7 under “Detailed Description of the Invention” please delete the paragraph starting with “Driving voltage is applied” and ending with “controls the pixel transparency”

On page 7 under “Detailed Description of the Invention” please delete the paragraph starting with “In addition, LCP control 34” and ending with “controlling the LCP enhancing capability”

On page 7 under “Detailed Description of the Invention” please insert the following paragraph:

The Method for Enhancing Visibility offers automatic image enhancement to common optics in-use today at various visibility conditions. By using devices such as the Light Controlled Panel (LCP), the Method for Enhancing Visibility provides the ability to control separately some or all observed element, while keeping the other elements almost intact. In the Method for Enhancing Visibility, a Light Controlled Panel (LCP) 32 is used to generate an active pixilated panel (Fig 3).

The Light Controlled Panel (LCP) process the observed image elements and an optical array collimates the image elements and optically directs them to the LCP’s focal plane. The image is transferred through the LCP (creating a sub-image) and via the complementary collimating optical array towards the observer eyes or to another optical system. Typically the optical power (magnification) of the system is one. The same collimating optics used for the complementary optics can be used to compensate for geometric distortion.

The LCP consists of pixilated array with a Thin Film (TF) light sensitive device for each pixel. Each pixel's transparency is controlled by the amount of light that shines on it. The panel can be made of transparency-controlled material 28, comprised of transparent pixel electrodes 27, controlled by embedded TFT Light Sensitive Elements (LSE). The transparency of all the elements (Contrast) can be controlled by the magnitude of the voltage that drives the LCP. The TF active element is attached to each Pixel (structure element) to precisely control it. The row and column electrodes used to control the pixels can be formed on the same substrate as the TF array. The DC driving signal is usually applied to the row (X) electrode of the pixel, and the contrast signal is applied to its column (Y).

On page 7 please amend the following sentence:

A verity of technologies, such as the following, may be used to implement transmissivethe LCP:

On page 7 please replace the last paragraph with the following amended paragraph:

The LCP 32 can be used in various pixel shapes, resolution and size to provide the desired optical system and required image quality. The driving voltage applied to the LCP controls its enhancement level and can also completely switch off the enhancement option of the LCP. ~~The magnitude of LCP's driving voltage can control the visibility level or even completely switch off the enhancement option and return to the regular behavior of an un-enhanced optical device.~~ Typically, when no power is applied to the LCP, the transparency of the panel is set to "Normally Open" state, in order to set the system to a neutral position (maximum transparency) as a fallback.

On page 8 please replace the second paragraph starting with "For some applications a reflective LCP " till the end of the last paragraph on page 9, ending with "Tempe, AZ USA, can be used." with the following amended paragraph:

For some applications a reflective LCP may be used. In these applications the reflected light is controlled by the pixels by its asociated LSE. For such panels a modified

DLP™ Micro Mirror array manufactured by Raytheon Inc. may be used by implementing the LSE on each pixel during the device manufacturing process.

An example of a device based on the Method for Enhancing Visibility ~~Visibility Enhancing Method~~ (VEM)-is illustrated in Fig 4-. The observed scenery comprised of incident light 14, 15 is collimated by the Optical Array1 30 and produces an imaginary image on the LCP 32 surface. This image passes through the device that attenuates the brightdesired elements. The image is then collimates back by the Complimentary Collimated Optical Array2 31 towards the observer's eye. The enhanced image, which is rotated 180 degrees, can be rotated back if desired by any related optics, mirror or fiber optic twister.

The LCP may be used as image enhancer or other existing equipment For example, the device can be used as an add-on to a camera, and the created an enhanced pohotographic image which can be rotated back during the printing process.

The Method for Enhancing Visibility ~~visibility enhancing method~~ can be also implemented on various types of optical devices, like car rear or side mirror, enhanced optical goggles, camera lens, spectacles, eyeglasses, sunglasses, glare-shield, window, or any enhancing optical device or protection devices like LASER or arc welding goggles.

As an example ~~example~~, a car mirror based on the Method for Enhancing Visibility ~~Visibility Enhancing Method~~-is described in Fig 5a. The Light ControlledControl Panel 32 creates an image on a prism or slanted mirrors 35 towards the observer eyes 33. As stated before, the bright image elements of the observed scenery pass through the Enhanced active optical ~~Device~~ array, and are dimmed by the LCP while the other elements pass undisturbed (or with minor attenuation) to the viewer. The image contrast is controlled automatically, or manually by the LCP drive 34.

Another example for a car mirror is a retro-optical array that may be implemented as illustrated in Fig 5b. In this example the light passes through an optical system comprising a Collimating Optical Array1 30 and a reflective LCP 32 that control the light intensity, and reflects it to the observer. The reflective LCP may be constructed of reflective pixel elements within the LCP or of a reflecting surface attached to a transparent LCP.

As an another example of the Method for Enhancing Visibility~~Visibility Enhancing Method~~, the Visibility Enhancing Glasses, depicted in **Fig 6** can be used. Linear optics, binary optics, holographic optics, diffractive optics, or any surface implemented optics may comprise the optical array that can be installed on standard glasses. The glasses visibility enhancing optical array is comprised of collimating diffractive Optical Film Array 1 **45** and produces an imaginary image on the LCP **32**. The image passes through the LCP which attenuates the bright~~desired~~ elements, and is collimated back by the complimentary collimating diffractive Optical Film Array 2 **46**. The image is then rotated by a film diffractive array **44** towards the observer **33**.

For resolving implementation difficulties associated with the Optical Film Array, products like Lenticular Lens or Microlens Technology can be used. For resolving implementation difficulties associated with the LCP, a variety of reflected image sources and technologies is available through Flat Panel Display (FPD) vendors. As one of the options, the same process that is being used for producing micro-displays and flat panel displays can be used to make the LCP with the exceptions that the black mask is not required and the TFT (Thin Film Transistor), which controls the optical array, is deposited such that it becomes a~~is~~ light sensitive element (LSE). Transperent devices~~Devices~~ like LCD (R-LCD), STN-LCD produced by companies such as SONY Co, Tokyo, JAPAN. SHARP Co, Osaka JAPAN, and Reflective devices like Liquid Crystal on Silicon (LCoS) devices produced by companies such as Displaytech, Longmont, CO, USA, MicroPix of Dalgety Bay, Scotland UK and Three-Five Systems, Tempe, AZ USA, can be used.

On page 10 On under "Conclusion" please replace the first three paragraphs, from "Accordingly, the reader will" till "to the LCP, etc." with the following amended paragraphs:

Accordingly, the reader will see that the Method for Enhancing Visibility~~Visibility Enhancing Method~~ of this invention has a unique ability to control the brightness of image elements and improve visibility, especially in light conditions where dimming the entire image should be avoided. The Method for Enhancing Visibility~~Visibility Enhancing Method~~ can be implemented on almost any optical device. In addition, the same approach which is used for the human vision spectrum may be used for other light

spectra (Near IR, IR, and LASER) where the optical elements and LCP are optimized to that spectrum.

The invented Method for Enhancing Visibility ~~Visibility Enhancing Method~~ can be used in optical systems like conventional vision optics with a direct view, optical arrays like those used in cameras, and more.

Although the description above contains many specificities, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention. For example, different types of optics can be used for collimating the light, the Light Controlled ~~Control~~ Panel may have different shapes, the reflecting mirror can be mounted at various angles to the LCP, etc.

Thus the scope of the invention should be also determined by the appended claims and their legal equivalents, rather than only by the examples given.